October-November 1970

EMO

The Future for Emergency Measures

- *Address by Minister of National Defence*
- *The Threat and Implications*
- *Redirection for Civil Emergency Measures*
- *Why Civil Defence*
- *Closing Address*

Czechoslovakia Accents C.D.

CANADA EMERGENCY MEASURES ORGANIZATION

EMO
NATIONAL DIGEST

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The EMO NATIONAL DIGEST publishes six editions annually to provide current information on a broad range of subjects dealing with civil emergency planning. The magazine is published in English and French and may be obtained by writing to the Canada Emergency Measures Organization, Ottawa 2, Ont.

In addition to publishing articles which reflect Canadian Government policy the Digest may also publish articles by private individuals on subjects of current interest to the emergency measures programme. The views of these contributors are not necessarily subscribed to by the Federal Government.

Editor: A. M. STIRTON

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THE FUTURE FOR CIVIL EMERGENCY PLANNING

Analyses of international foreign policies by Canadian and United States authorities provide a background for civil emergency planning discussions when about 90 senior federal and provincial government leaders and industry officials met to participate in the third annual Civil Emergency Measures Seminar September 8-10, 1970 at the Canadian Emergency Measures College, Arnprior, Ont.

The two-day seminar was held to provide a forum for a free exchange of knowledge and opinion on Canadian and international affairs to give added depth and perspective to the necessity for continued civil emergency measures planning. As well as discussing the need to plan for wartime emergencies, the development of contingency plans to cope with peacetime disasters by all levels of government and industry was emphasized in presentations by Canada Emergency Measures Organization officials. Chairman of the Seminar was Mr. C. R. Patterson, National Coordinator, Civil Emergency Measures, Ottawa.

Following the opening address from Hon. Léo Cadieux, former Minister of National Defence the first day was devoted to presentations on the foreign policies of Russia, People's Republic of China, Canada and the United States. Speakers on these subjects were Dr. R. H. NcNeal, University of Massachusetts; Prof. W. G. Saywell, University of Toronto; Mr. J. G. Harris, Department of External Affairs and Mr. Melvin Conant, Jr., Standard Oil Co., New York, respectively.

The second day of discussions were centered on Canadian and North American emergency measures and civil defence subjects. Following an address on the Strategy of Intercontinental Defence by Dr. George R. Lindsey, Defence Research Board, Mr. S. N. White, Canada Emergency Measures Organization, presented a paper on the Threat to Canada and its Implications.

The winner of the 1963 Nobel Prize for Physics and world-renowned expert on civil defence matters, Dr. Eugene P. Wigner of Princeton University, presented his analysis on The Responsibilities Costs and Rewards of Civil Defence. Then Mr. J. F. Wallace, Canada EMO addressed the officials on the problems, activities and possible future requirements of a civil emergency measures program to meet wartime needs and peacetime emergencies.

Following a panel discussion in which the final day's speakers participated, the closing address was given by Dr. J. C. Arnell, Assistant Deputy Minister (Finance), Department of National Defence.

The following papers are published to indicate the future trend of emergency measures planning in Canada:

—Opening Address
—The Threat and its Implications
—Redirection for Civil Emergency Measures
—Responsibilities, Costs and Rewards of C.D.
—Closing Address.

OPENING ADDRESS

by
Hon. Léo Cadieux
Former Minister of National Defence

May I first say how pleased I am to see so many of my colleagues in attendance this morning. It most surely indicates a growing awareness of our responsibilities in planning for the security and safety of this country in peace and war. An extension of this awareness is further evident, by the presence of such a large number of senior officials who have left busy desks to consider their emergency responsibilities on this occasion. May I welcome you all, most warmly, to this third seminar on civil emergency planning.

Each September we find ourselves in the situation where we must once again start a year of planning. It is quite true that the federal fiscal year starts in April but the psychological year always begins when the summer holiday season ends. I believe that for this reason this too is the time when government ministers and senior government officials must look at the national and international situations in order to be better able to direct and encourage their emergency planners in their efforts in this field.

Planning for the defence of Canada and its people is a vital responsibility of governmental leadership, one and which must take into account possible causes and potential consequences of international conflict. While I do not believe that nuclear or conventional war is likely, I do say that preparedness cannot be ignored or deferred. On the contrary, it is my conviction that steady progress must be made in the development of plans and measures which, should they ever be needed, can be rapidly implemented to ensure the maximum survival of Canadians, the continuity of leadership in government, industry and society, and the continued availability of essential resources.

We must always be conscious that the existing balance of peace can be threatened by a variety of situations, such as Vietnam, Cambodia, the turmoil in the Middle East, the Sino-Soviet confrontation and, generally, the continuing conflict between Marxism and Capitalism. Right at the moment, I am happy to say, we regard with optimism, cautious though it may be, events and activities such as the signing of the Non-Proliferation Treaty and the Strategic Arms Limitation Talks.

The problems facing the leaders in government and the private sector, as you know, are complex and many and, as a result, priorities must be established and action taken accordingly. In the defence of Canada the Prime Minister has assigned the following priorities to the roles for the Canadian Forces.

(1) The surveillance of our own territory and coastlines, i.e. the protection of our sovereignty;

(2) The defence of North America in cooperation with the United States;

(3) The fulfillment of such NATO commitments as may be agreed upon;

(4) The performance of such international peacekeeping roles as we may, from time to time, assume.

These priorities recognize the need for continental defence. For me, the defence of Canada means not only the classically accepted active defence activity, but also the protection of the individual and of the social structure from the direct effects of modern warfare. As a significant agency within my Department, the Canada Emergency Measures Organization is responsible for the coordination of non-military emergency plans and preparedness by federal departments and agencies.

To meet the need for total defence planning, the support of local governments is an absolute essential. Here the Canada Emergency Measures Organization gives assistance by the provision of leadership and coordination, by the allocation of shared funds by interpreting the current raison d'etre for civil emergency measures. Planning for the defence of Canada, survival of the nation as a whole and recovery should war ever occur is, however, a collective responsibility, our mutual responsibility no matter what government we serve.

I would like to make one further point, before turning this meeting back to the chairman, this seminar is not on international affairs but on civil emergency measures. It is necessary, however, to present the current international situation as the backdrop to properly illustrate the necessity of civil emergency measures and so that worthwhile discussions can be held on the effect of the international situation on Canada. The views expressed at this conference will, I am sure, give added depth and perspective for continued planning for military and civil defence of Canada in peacetime.▲

THE THREAT AND IMPLICATIONS

by
*S. N. White**
Director General
Long Range Planning and Policy Development

Introduction

If there is one thing that a long range planner must do, it is to attempt to see into the future, trying to measure, as he does so, the trends which are bringing about change in the environment for which he is planning. To-day my task is to discuss certain areas in which current trends are making profound changes, so much so that I must talk about the threats (plural) to Canada and their implications.

Nature of the Threat

Dr. George R Lindsey, Defence Research Board, has covered for you some of the major problems in continental defence, and in so doing, he has of course indicated to you the threat which creates these defence problems (EMO National Digest Vol. 9, No. 4, August-September, 1969 refers.). I am going to approach the threats to Canada from a somewhat different viewpoint.

Before I do so, however, let me explain my approach to the word "threat". To me, this can only be satisfactorily understood if it is amplified by a statement of that which is threatened. This could lead to a long philosophical dissertation as to whether it is our territory, our people or our economy or something else which is threatened, and by whom, or by what. I propose to cut that short by taking this course: first, to define what we believe Canada's purpose in the world to be and then assume that anything which counters that purpose is a threat to Canada. We believe that Canada's purpose in the world to-day is to promote by all means within her power the creation of an environment, both international and national, in which she can preserve her national identity, expand her economy and develop her social structure, all according to the wishes of her people . . . I would, therefore, suggest that anything which tends to counter that purpose is a threat to Canada. This might be put in a different way by saying that anything which tends to create instability in our social, political or economic structure is a threat. One can see that the nature of threats of this type is vastly different to that which was considered during the first half of this century; and that the spectrum of national security problems becomes considerably enlarged when viewed in this way.

There is not time, in this address, to analyse the derivation of the types of threat which emerge from this approach to the problem. However, we have done so and, because I believe there are other processes of logic which will lead to the same answers, you will not be surprised to be told that the phenomena of civil disorder, external interference in the economy and denigration of our viability as a nation are indicative of the type of threat which emerges from this sort of consideration, and which must now be added to the traditional threat of armed attack, including that which Dr. Lindsey has already discussed.

If one feels that these threats are receiving co-ordinated direction from outside Canada, then one can label them political, psychological and economic warfare. Personally, I believe that is getting over dramatic; and may in fact take one's eye off such very important matters as analysing the threat, our vulnerability to it and how to deal with it.

We should add to our list of threats those of natural and man-made disasters for they too threaten the social and economic structure. That this is recognized elsewhere is evidenced by the establishment within NATO (at the suggestion of President Nixon) of the Committee on Challenges to Modern Society.

A further change which emphasises the importance of these, what we might call civil threats, is that modern warfare among major nations is no longer an attractive or profitable method of resolving international differences. Even the advantages of surprise attack are countered by the second strike capability of the major powers. Indeed, although I suggested that we not be overdramatic and talk about political, psychological and

**ABOUT THE AUTHOR*

Mr. White was born in Belfast, Ireland, in 1917 and educated at Campbell College, Belfast; Royal Military Academy, Woolich and Cambridge University (M.A.).

During the Second World War he was a regular officer in the Royal Engineers and served in the United Kingdom, France, Belgium, North Africa, Sicily and Italy. He is a graduate of the Staff College, Quetta, and the National Defence College, Kingston, Ontario.

Following seconded military service in Canada he joined the Federal Civil Defence in 1956 as an engineer planning officer and became Chief of Engineering in 1958. Between 1959 and 1969, when he was appointed to his present position as Director General, Long Range Planning and Policy Development Branch, he was Chief, Survival Planning (Technical) and Chief, Protection Division for the Emergency Measures Organization.

Mr. White is a Member of the Engineering Institute of Canada and a Registered Professional Engineer of Ontario.

economic warfare, nevertheless, it may be salutary to reflect for one moment on how far, if a major nation were so inclined, would the funds for the next order of offensive weapons go, if, (instead of being applied to the weapon systems), they were applied to increasing one or more of these civil threats.

As a result of all this, it seems to us that while the Russians and Chinese continue to develop their capability to wage war and that we cannot therefore afford to neglect the resultant potential threat, yet its materialisation in the words of our Minister, "is not likely". So that some of the problems of what I have called the civil threats loom larger, are more important and become more urgent in to-day's environment.

Implications

The implications of these threats are not so easy to discuss and I must hasten to say that this is because in the past ten years or so we have spent much more time thinking about and analysing the implications of the threat of war. This was really Canada EMO's prime purpose and such responsibilities as we now have relative to these newer threats have stemmed from the fact that the capabilities, skills and "know-how" developed to meet a war emergency have many of the ingredients necessary for dealing with other types of civil emergency.

I would not wish to convey the impression that we have done no forward thinking relative to these civil threats. Indeed for some four years now we have maintained a fellowship for a Canadian at the Disaster Research Center of Ohio State University and have thereby profited not only from the work of that fellow, but also from much of the other investigative work carried out at the Center; we commissioned in 1967 a professor of the University of Toronto to investigate and report on the frequency nature and scope of natural disasters; and we have noted and studied the application in Washington, D.C. and value, when used in a civil disorder context, of the municipal control and communication facilities which had been established for civil emergency purposes. There are other examples, but these should suffice to indicate that in Canada EMO we have not been over obsessed with one aspect of the threat even if it is that which we have studied most.

Consequences of Disaster

When a threat has materialised, we may say that an emergency has occured. We could say a disaster has taken place. No matter what we call it, the consequences will be in three major areas and these are the same no matter what the type of threat. That which varies is the degree, or extent of the consequence. There is a fourth consequence which has been observed in areas where there has been serious civil disorder and which I believe would also occur in a war emergency. (Figure 1.)

Let us discuss each of these consequences a little more.

CONSEQUENCES OF DISASTER

1. Loss of life and/or casulaties.
2. Physical damage.
3. Impact on local, regional or national economy.
4. Impact on political and social organization and procedures.

Figure 1

Lost of Life and Casualties

Loss of life and casualties frequently accompany any form of disaster, but it will surprise no one to learn that the percentage of casualties is significantly reduced when it is possible to disseminate warning of the impending catastrophe and when some pre-event education of the public on how to prepare for it, is possible. Floods and hurricanes usually permit some warning, earthquakes and tornadoes usually do not (Figure 2).

CASUALTIES

Halifax Explosion	1,600 to 2,000 killed 10,000 to 16,000 injured
Hurricane Carla (U.S.A.)	43 killed (most of whom had refused evacuation)
Hurricane Camille (U.S.A.)	Approx. 300 killed
Hurricane Celia (U.S.A.)	13 killed
Windstorm—Sudbury area	3 killed
Hurricane Hazel (Canada)	82 killed

Figure 2

Physical Damage

Turning now to the aspects of physical damage. Few disasters occur without the accompaniment of physical damage. In fact, it is generally the nature and extent of physical damage that determines the magnitude of the disaster. Once again. there is a wide spectrum. Consider the town of LIVELY, ONTARIO damaged in recent severe windstorm (Figure 3). And then compare this with damage caused during a nuclear war, which is at the top end of the spectrum (Figure 4).

The major implications of physical damage are homelessness and loss of employment, to say nothing of the economical impact of loss of fixed assets and loss of industrial or agricultural production.

PHYSICAL DAMAGE
Damage to Houses, Lively, Ontario.

Destroyed	8
Serious Damage	60
Minor Damage	300

Figure 3

Damage limiting measures can, of course, be introduced to minimize this component of disaster. There are many examples—the floodway round Winnipeg, the dykes in the Fraser Valley and buildings constructed to special building codes in order to resist earthquake shocks; and this is all going on now. What about the upper end of the spectrum, i.e., nuclear war? There is a tendency to disregard the possibility of damage limiting measures being effective—but here again we have examples. Bell Canada Limited are building a large degree of redundancy into their circuits with the result that large cities subjected to nuclear attack can be instantly and effectively bypassed. In selecting their major control centres the company has chosen locations unlikely to be targets for nuclear weapons. This points up another meaning of "damage limiting" which is to arrange and deploy the elements of a system so that any damage caused will have a minimum effect on the system's operation; and we are then talking about limiting damage to the system as a whole. We have a long way to go in the field; but there are attractive possibilities for duality of purpose. One study-conference which we held here even convinced us of the possibility that some of these measures might have an economic benefit in a non-disaster context.

Impact on Economy

Certainly, it is no profundity to state that disaster, disorder or war will have an effect on the economy of an area however the effects may be. The town of Eganville, Ontario lost its bakery and sawmill in a serious fire and with it most of the town's livelihood. Field, in the recent Sudbury-area storm suffered similarly through loss of a sawmill. Unemployment in Corpus Cristi, Texas, went from 4.9% to approximately 10% following Hurricane "Celia". To this sort of impact must be added the costs of restoring, replacing or relocating what existed before. Finally when one also adds in the costs of rescue, life saving and property-protection

RELATIONSHIP OF DISTANCES AND EFFECTS OF A 2 MT NUCLEAR WEAPON

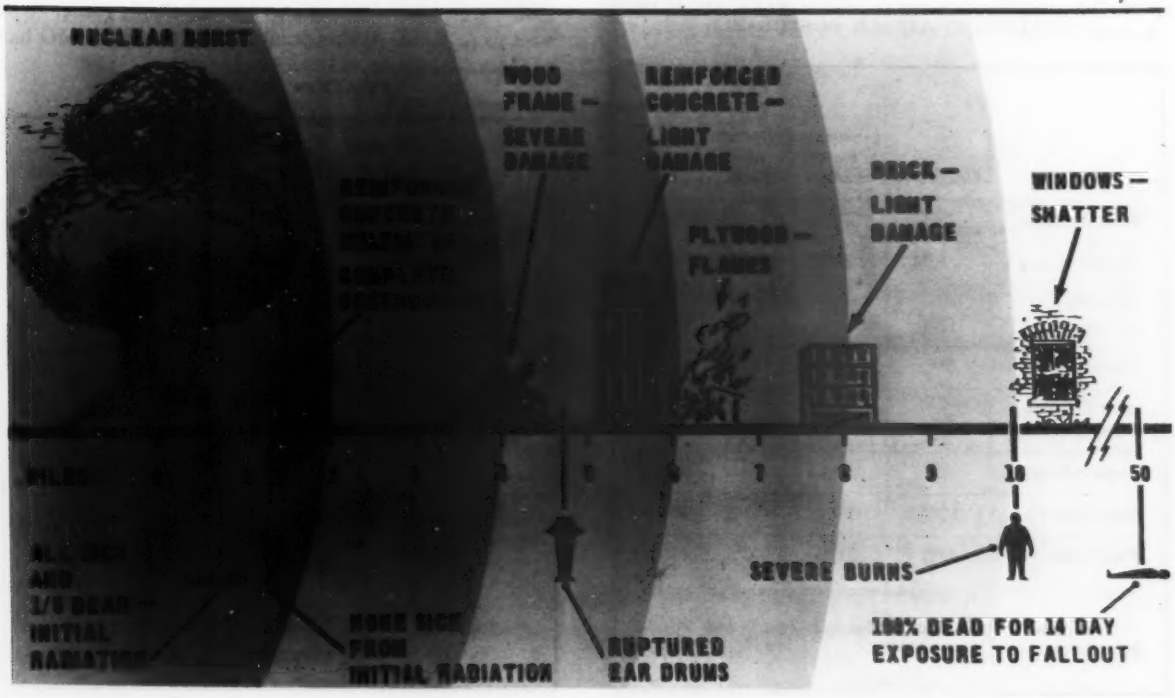

Figure 4

operations during and immediately after a disaster, the drain on resources may be quite serious.

Let us look at the total costs of some recent disasters. (Figure 5.)

COSTS OF SOME PAST EMERGENCIES (in Millions)

Fraser River Flood—1948	$ 22
Red River Flood—1950	$ 25.2
Rimouski and Cabano Fires, Quebec—1950 (Total Less Insurance)	$ 9.5
Hurricane "Hazel"—1954	$ 24.6
Saskatchewan Floods—1955	$ 10.7
Red River Flood—1966	$ 13.6
Hurricane "Camille" USA—1960	$1,412.75

Figure 5

Now for a moment let us turn to the implications of nuclear war. As before, the consequences are extremely grave, but in many cases what remains exceeds 50%. (Figure 6.)

PERCENTAGE OF CANADIAN RESOURCES AVAILABLE FOLLOWING ATTACK POSTULATED

Resource	*Unaffected*	*Undamaged under Fallout*	*Light Damage under Fallout*	*Total*
Hospital beds	26%	25%	8%	59%
Grain elevators	53%	20%	4%	77%
Petroleum refineries	12%	16%	21%	49%
Port Berthage	23%	25%	5%	53%
Men's clothing manufacturing	—	8%	—	8%
Sugar refineries	—	28%	—	28%
Shoe Factories	12%	18%	5%	35%
Flour mills	30%	31%	2%	63%

	Non-Fatally Injured	*Unaffected*	*Total*
Population	11%	45%	56%

Figure 6

The important point about all these figures is not to regard them as absolute predictions of what would happen, but rather to use them as indicators of what sections of the economy are critically vulnerable, and where, and why. To help us understand these matters, we have developed a national resources data bank, and have a computer program to calculate the consequences when parts of the country are subjected to sudden and catastrophic disruption or damage. With the help of the Dominion Bureau of Statistics, we hope to couple this program to the input-output type of analysis beloved by economists, and so be in a position to further analyse on a local or national basis, the effects of major peacetime emergencies. It is an understanding of this nature which must be added to our existing knowledge if we are to plan effectively to counter harmful effects to our national, regional or local economies.

Impact on Political and Social Structure

I do not wish to add a great deal on this subject. The implications have long been recognized in our planning for war; but it is interesting to note that researchers have detected changes, of varying degree, in social and political patterns in areas where there had been serious civil unrest and disorder—the inference being that the change was a consequence of the disorder. One indication of this is the occasionally voiced complaint concerning the imminence of a "police state" type of control. I suppose the corollary of this is that to bring about desirable, instead of undesirable change, one must study the causes, effects and mechanisms of spread, of civil unrest and then plan to correct them; rather than wait to respond. At this point in time Canada EMO has

LOCATION OF THREATS

Nature of Threat	*Most Likely or Most Frequent Area*
Flood	B.C., Prairies, New Brunswick
Earthquake	West Coast, Ottawa and St. Lawrence Valleys
Forest Fire	All Provinces and Territories
Hurricanes, Etc.	Southern Ontario
Air Crashes	Anywhere in Vicinity of Air Routes and Airports
Major Industrial Accidents and Explosions, Fire, Chemical Accidents, etc.	Industrial Cities or Anywhere on any Transportation Route
Civil Disorder or Unrest	Major Cities
Nuclear War	Major Cities and Areas Adjacent Military Targets

Figure 7

carried out no such study although it has read with interest those papers which have been prepared elsewhere.

Location of the Threat

With a large country such as Canada, we should look at the areas where the threats which we have been considering exist (Figure 7). It is significant to note a large degree of correlation between the areas at risk to civil threats and those at risk to war threats. The points I wish to emphasise here is that all areas have some threat against which they should plan, and that the basic elements of that plan, if prepared effectively, will serve with some modification to meet any form of the threats we have discussed.

Conclusion

In conclusion, let me say that I fully realise that we, in EMO have never before presented to you the threat to Canada in this way. We have not done so this time without a careful examination of the trends and environment of to-day. While previously, we have emphasised the threat and consequences of war, and while that threat has not been eliminated, to-day we believe that what I have described as civil threats must also be included in the spectrum of threats to our country and should indeed, at the present time, take precedence over the threat of war.

These threats if materialised can develop instabilities in the social, political and economic structure of the area affected and have consequences which can be categorised—in categories which are relevant whether we think of a minor local disaster or nuclear war. There can, and should be, therefore, a similarity of approach to the development at each level of government, of plans to meet all these different threats; and it is quite clear, to us at any rate, that at each level of government there must continue to be a single co-ordinating agency to ensure the preparation of effective plans and their implementation where necessary.

It will also have become obvious that the necessary plans lie in two areas:

- non-military plans to avert the materialisation of a threat,
- non-military plans to restore stability to an affected area in which a threat has materialised.

It is in the latter group that Canada EMO and provincial and municipal EMO's have advanced furthest—how far, you will be hearing from Mr. Wallace later (Page 14). However, in the former category there is a great deal to be done. As we look over the problems in this area, we see a prime need for co-ordination; a need for further definition of responsibilities; a need for correlation between plans to maintain stability and those to restore it, once it has been upset, a need for developing our readiness to respond and finally, a need for a great deal of study and research in the areas of the social, political and economic sciences. These are all needs to which I believe we should now be devoting some attention and are indeed among the most important implications of the Threat to Canada.

I know that I speak for the National Co-ordinator in stating that Canada EMO stands ready to act as a "trouble-shooter" in any or all of these areas of need.▲

FOREIGN POLICY REPORT

from the Canadian Forces Bulletin, August 1970

A brief analysis of Canada's emergency preparedness program, particularly with its emphasis on having a capability of dealing with peacetime emergencies, shows that each activity in the program has a relevance to Canada's national policy.

Entitled "Foreign Policy for Canadians", a series of papers was tabled in the House of Commons on 25 June. They are the result of a special foreign policy review announced in 1968 by the Prime Minister.

Six in all, the papers deal with the government's approach to foreign policy as a whole international development, and Canada's relationship with Europe, Latin America, the Pacific and the United Nations.

Following are some excerpts from the papers which will be of particular interest to the *Bulletin's* readers in so far as they relate to national defence.

In developing policies to serve the national interests, the government has set for itself basic national aims which embrace three essential ideas:

- That Canada will continue secure as an independent political entity.
- That Canadians will enjoy enlarging prosperity.
- That Canadians will wish to preserve for themselves *their* way of life and the contributions they make to humanity.

Six Aims

Canada's national policy, which also forms the framework of foreign policy, seeks to:

- Foster economic growth.
- Safeguard sovereignty and independence.
- Work for peace and security.
- Promote Social Justice.
- Enhance the quality of life.
- Ensure a harmonious natural environment.

REDIRECTION FOR CIVIL EMERGENCY MEASURES

by
*J. F. Wallace**
Director General, National Survival and Recovery Program
Canada Emergency Measures Organization

Introduction

In the past, in this country, we at the national level, have looked at civil emergency measures principally from the point of view of organizing to meet the war or external threat to the nation, acknowledging the usefulness of the arrangements to meet a wide range of peacetime emergencies. On the other hand, in recent years, some provinces have emphasized their arrangements to meet these internal emergencies.

Mr. White (see page 3) has introduced a theme which, to many in the audience, will represent a significant shift in emphasis in our planning.

This shift was forecast, albeit very carefully, in the National Co-ordinator's statements to Canada EMO Regional Directors and Provincial Co-ordinators and Directors in April of this year, following the Prime Minister's statement on defence policy and, more recently, at a meeting of federal civil emergency planners in Ottawa. I mention 'carefully' because we were not too certain ourselves as to what the full implications might be.

This presentation will represent Canada EMO's views on this shift. It will reflect some of our thinking that has taken place since the last Provincial Directors and Co-ordinators Conference and, I suppose, could be said to be a crystallization of our thoughts up to this point in time—and from the federal viewpoint, would seem to meet or parallel the direction which, to us in Canada EMO, was indicated by the Prime Minister in his April statement.

**ABOUT THE AUTHOR*

Mr. Wallace was born in Victoria, British Columbia and educated at St. Michael's College, Toronto (B.A.); the University of Toronto (M.A.) and Laval University, Quebec City.

During the Second World War he served with the Canadian Armoured Corps in the United Kingdom, Sicily and Italy. He was awarded the Military Cross as the result of his service at Termoli, Italy.

In 1949 he joined Civil Defence and assisted in development of the program for Canada. He was appointed Deputy Commandant and Chief Instructor of the Canadian Civil Defence College in 1953. In 1959 he was transferred to the Emergency Measures Organization in Ottawa as Assistant Director. He was appointed Director, Program Implementation Branch in 1965 and assumed his present position as Director General, National Survival and Recovery Program Branch in 1969.

Many things which will be mentioned here may appear to be new—although not to everyone here—and to still others, they will probably appear logical and make some wonder what we have been doing over the years. But above all, it will introduce an added emphasis to the importance of flexibility in the future employment of emergency measures planners, equipment and resources. Naturally, we expect that provincial EMO's and planners at the federal level, will want to discuss these matters with us.

Prime Minister's Policy Statement

In his statement of April 3, the Prime Minister referred to four aspects of a Canadian Defence Policy, and these are listed in their order of importance at this time:

- Sovereignty;
- Defence of North America in co-operation with the United States;
- Maintain NATO commitments;
- Peacekeeping.

From a civil emergency measures point of view, Canada EMO feels there are many implications for civil emergency planners within this statement on defence:

Sovereignty—We feel this includes the preparations made to meet floods, hurricanes, tornadoes, civil unrest and disorders—in fact, any peacetime emergency which can disrupt, damage or destroy our civilian society and, hence, hinder national development. We can call this the **Internal Threat** and it has implications to all levels of government.

North American Defence—implies armed attack or, more specifically, nuclear attack. Considering the consequences of such an attack as has been described by Mr. White, the **External Threat** also has implications for all levels of government.

NATO—we shall continue to maintain civil commitments so that, should major wars break out, Canada could contribute effectively in certain of NATO's civil wartime agencies—with implications mainly, for federal departments or agencies.

Peacekeeping—at this time, we do not see any major implications for civil emergency planning.

In the past, as I have already implied, the primary emphasis on civil emergency measures programs was related to the external or military threat. However, in the eyes of the government, this threat is not, at this time, as serious as the elements which, we suggest, can be included in the **Internal Threat**.

In other words, the risk of peacetime emergencies or disasters taking place is higher on the scale of probabilities than a nuclear war. Therefore, among civil emergency planners, there is a need for a reorientation of thinking and of programs. Considering the fact that for over twenty years, the eyes of civil emergency planners have been focused primarily on the external threat, one should not be too surprised if the intellectual commitment to the new emphasis takes a little time.

Having said this, we must be careful not to 'throw the baby out with the bath water'. To ignore the possibility of nuclear war and to defer the implementation of measures to meet such a threat, could indeed be catastrophic. What is still needed is to have in existence and maintained, a total system operating at a level of activity which could be speeded up if the situation warrants it. (To ignore the possibility of nuclear war seems to be a peculiar North American pastime.)

The real problem is that the rather extraordinary preparations needed to meet the nuclear threat require long lead times and, in all probability, longer than the period of time that could be involved in moving through a drawn out escalation of conventional fighting into general war.

Further, it is recognized that the constraint of the present East/West confrontation, which might escalate into general or nuclear war, will probably continue indefinitely. This constraint apparently helps to preserve the peace between the major powers but does not guarantee it.

The constraint is not foolproof. Nor is it sufficient to rely on the theoretical concepts of the deterrence, and unacceptability of damage, which receive more credence on this continent than in Europe (including Soviet Russia). To me, the deterrent is like the Maginot Line—if it collapsed, it would do so with catastrophic results.

It is a nice cliche to say that such a war is unthinkable, but the consequences of nuclear war are so great they cannot be ignored. Hence, time and effort will and must continue. Regretably, I suppose the costs of such preparations from a civil emergency measures point of view, will be higher than those involved in meeting what has been described as the **External Threat**.

We have heard mentioned our vulnerability to each form of threat, as well as the consequences of them, in terms of

a. loss of life or casualties;
b. physical damage;
c. impact on economy;
d. impact on social and political structures.

Civil Emergency Measures Planning Objective

Arising out of these consequences and our deliberations, we are proposing a new national objective as follows: to develop throughout the nation non-military plans and preparations for responding to emergencies caused by internal or external threats to the social, political or economic structure of Canada.

To meet this objective by the Federal Government, requires the development of:

- civil or non-military plans to support or supplement provincial and local authorities in countering internal threats and thus contribute to national development; and,
- civil emergency plans to counter the consequences which could arise from the military threat as reflected by our national commitments to North American defence and NATO.

At provincial and local levels, there should be greater emphasis placed on the need to:

a. develop co-ordinated plans to meet contingencies arising out of peacetime emergencies; and,
b. develop co-ordinated plans to meet a variety of contingencies arising out of the threat of nuclear attack.

Nationally, and granted this is very ambitious when one considers the current resources available for civil emergency plans and preparations, is for all components of society to prepare for their responses to emergency situations.

We know from past experience that unless effective plans are developed, the response to an emergency will invariably be uncontrolled and certainly uncoordinated.

Obviously, one can be carried away in one's enthusiasm to meet these potential emergencies and there is a need, in developing emergency preparations, to exercise caution because there is no practical limit to the amount of investment which is necessary to ensure absolute freedom from loss due to the occurrence of adverse events—there is seldom justification to prepare for the extremes.

Aims of Civil Emergency Measures

Arising out of an analysis of the proposed national objective, there are three basic aims, namely:

- To protect and preserve life and property through measures which will enable the nation to meet the hazards arising out of disasters or emergencies.
- To maintain the structure of government during emergencies so that guidance, leadership and operation of essential services can continue.

- To effectively manage our resources and, as required, create the organizations which would exercise effective control over them.

Major Lessons or Observations From Past Disasters

There are many one could choose. I have selected eight examples:

1. When community organizations have no emergency plans which fit into an organized, overall disaster plan, their emergency response tends to be segmented—too limited in scope and too dominated by the immediacy of the crisis to adequately cope with all aspects of the crisis That is, local organizations tend to see the emergency through their own eyes and very seldom from a truly objective point of view.
2. When civil disorders take shape or threaten, there is too often a tendency to view them solely from a law enforcement point of view, when experience elsewhere indicates a need for a broader based for of governmental involvement. Additionally it seems, on the basis of U.S. experience, that they result in organizational changes and innovations within the structure of government, especially local government. Such is not the case for other types of emergencies.
   We have a great deal to learn about this new phenomenon (civil disorder and unrest), and greater research efforts are needed. For example: Do we provide equipment to the participants and generally try to co-operate? Is looting in a civil disturbance a protest or a crime? Is there any difference in substance to making arrangements for, and policing sports, a Santa Claus parade or a rock festival? What are the perceptions of civil authority to disorders? Why do some civil disorders or disturbances escalate and others do not? What deviations from legal norms take place in or during an emergency?
3. Past and present evidence indicates not a lack of disaster planning but inadequacy and inappropriateness of the planning. Although many communities could be said to have very good plans, when were these last reviewed and when tested?
4. During an emergency, there is a real need to develop an overall picture of disaster situations including the nature and extent of damage, so as to understand the dimensions of the tasks facing the community (information on damage and casualties). Usually, there is no single community organization which is responsible for initially collecting and interpreting the data. If relevant information is not pooled, communications facilities, such as phones and radios, are inadequate, with the result that variations in disaster reports persist. Governmental control can be lost. Therefore Situation Rooms, properly staffed and organized, as well as adequate communications, are an essential requirement.
5. Effective warning systems and means for dissemination will reduce casualties and damage to property. Hurricanes Hazel, Camille or Celia are examples where adequate or inadequate warning proved the importance of warning systems.
6. Ethnic makeup of populations must not be forgotten and disaster instructions must be prepared so as to be understood by all major segments of a population.
7. It seems that if there are disaster plans, a community becomes a much more efficient problem solving entity during the emergency, because there arises a consensus on the importance and priority of values. Certain activities become crucial—others temporarily irrelevant.
8. The economic consequences of major disasters should not necessarily be measured by estimated costs of damage but by rises in unemployment; or, on the other hand, impassable transportation routes, damaged ports and terminals can cut off resupply to otherwise surviving industry and commercial institutions.
   Even in our war emergency planning, there has been too great a tendency to look at a post-attack phase in the light of casualties and physical damage, when social disorder, lack of governmental control, lack of will, etc., may be more appropriately the problems to be studied.

Some Principles of Civil Emergency Measures Organization

In making disaster preparations, which are inherently a government responsibility, there are two ways of organizing a nation, or indeed, a community, namely, by means of a centralized organization which has strong powers to direct all components of the nation or community or through a decentralized system where the organization, planning and operations follow the normal organization of government.

In Canada, we have adopted the indirect or decentralized method which, in part, is a recognition that emergency operations are an extension, in most cases, of the responsibility of existing agencies and departments of government, viz., the hard core of needed emergency organizations already exists. Additionally, this also means that one should capitalize on the strength of existing voluntary agencies and societies, such as the Canadian Red Cross Society, St. John Ambulance, Salvation Army, etc.

EMO must be responsive to the new or unusual needs of the community. Otherwise, who else in the community is there to take charge? Examples of this response were demonstrated in British Columbia by Tsunami warnings and a nerve gas contingency plan which was developed earlier this year when there was a possibility

of transporting these agents through the Straits of Juan de Fuca.

Equipment and resources should have a dual purpose, so as to serve not only the purposes of war emergencies but also for peacetime emergencies.

EMO are the co-ordinators of planning and operations, not necessarily the doers.

Civil Defence or Emergency Measures operations is simply government operating in an emergency.

Major Resources

The resources available and held by provinces and municipalities are immense. For example manpower resources as shown at Figure 1:

Fire	—73,000
Highways—field organizations	—30,000
EMO Volunteers—Auxiliary Police Auxiliary Fire Rescue Health Communications Transportation Welfare	over—50,000
Hydro Repair Crews (including Linemen)	—17,200
Gas, Oil, Water, Sewerage (Utilities Generally)	—16,300
Welfare Professional Staffs	— 5,500
Regular Police	—41,000

Figure 1

If one also considers the technical knowhow of these people, the equipment and resources they control, it becomes apparent that the key to successful organization for disaster, hinges on the capacity to have them properly co-ordinated. I would suppose one of our hardest tasks is to convince some governments of their need to have emergency plans. There is nothing easier to do than to push them into the background, when an emergency does not exist or a danger is not apparent.

Those who suggest that the military are better equipped to do the job should, possibly, rethink their simplistic solution. What the military does have, is the ability to respond quickly to support or supplement the various civil authorities.

Scope of the Organization for Civil Emergency Measures

Our civil emergency preparations are intended to cover the whole spectrum of civil or non-military defence measures for peacetime or wartime emergencies. Within Canada EMO are to be found the organizational elements required to give effect to planning and co-ordinating the component parts of the national program.

The agencies responsible for civil emergency measures range from federal—through provincial—down to municipal, where roughly 300 odd EMO's plan and co-ordinate arrangements for some 4000 city, town and county government authorities. It is said that these arrangements cover 90 per cent of the population. When I say 'cover', I would not wish to leave the impression that the effectiveness of their arrangements is uniform or that, indeed, in all cases, they are truly effective.

The Structure of the Program

Although the overall structure of our national program is fairly well known among many here, what I intend to do is to outline briefly, the component parts of it, indicating where they may have a purpose relating to both the Internal and External threat, as well as indicating where we and provincial EMO's have been involved in supporting activities related to peacetime disaster or emergency preparedness. We will again be assessing the objectives of each program, and activities associated with them, so as to align them with the new government priorities.

The national program is comprised of seven groupings as follows:

- Public Protection
- Public Information
- Essential Societal Services
- Continuity of Government
- Utilities and Special Services
- Economic Planning and Resource Control
- Supporting Service Activities

As is implied by its title, **Public Protection** covers those types of activities which would, if implemented, result in the prevention of loss of life or injury to people. I would draw to your attention that the illustrations shown by Mr. White, with regard to large numbers of casualties, were without preventive actions on the part of anyone.

The first activity, namely *Dispersal*, means, in the case of the External Threat, pre-attack evacuation of threatened areas and the subsequent reception of evacuees into areas subject, possibly, to lesser hazards. In the case of the Internal Threat, the development of contingency plans wherever a particular emergency or disaster can be predicted. In the case of larger urban centres, it may not be necessary to move people outside of the centres' boundaries. It is interesting to note that in the United States, the tactic of dispersal forms a real part of emergency operations related to hurricanes.

The next activity called *Individual Protection*, refers to the disaster plans which can be developed by householders, which would include first aid and home nursing, fire prevention, emergency supplies and equipment, emergency sanitation and, above all, knowledge about the types of disasters or emergencies. Such preparations will contribute to the safety of individuals as well as make them more self-reliant in a post-disaster environment.

The activity of *NBC Defence* (Nuclear, Biological and Chemical), refers mainly to the wartime emergency. Because the threat of B&C Warfare is very low, we

devote our attention to having established in each municipality, a capacity to measure radioactive hazards arising from detonations of nuclear weapons.

Over the years, we and the provinces have procured substantial quantities of equipment for wartime radiation defence purposes. Interestingly though, I do recall that local organizations in the past, have been used to search for lost radiation sources and, indeed, here at the College, we did include instruction in Radiation Defence Courses, on how to organize searches. Additionally, when one considers the nature of chemical hazards occurring in the field of transportation, possibly EMO's should be giving attention to such matters.

The fourth activity, namely *Shelter*, refers mainly to our endeavours in the field of fallout protection and protection against the primary effects of nuclear explosions. Our recently completed National Fallout Protection Survey, which revealed a tremendous potential of accommodation for sheltering people against a fallout hazard, will assist planners in developing community shelter plans.

In the field *of Anti-blast Protection*, our work is limited to research at this stage and emphasis is placed on how buildings can be strengthened to resist, to a greater degree than they do at present, the probable blast and other primary effects of nuclear explosions; and also on how we can determine the protective qualities which are inherent in existing structures. Obviously, any success in this area of endeavour has payoff in the response of buildings to a wide range of possible peacetime disasters.

At this time, our **Public Information** sub-program involves the three activities of Emergency Public Information Services, the Peacetime Public Information Service, and Warning.

It has been proven rather conclusively, I think, that during an emergency, whether war or peacetime, there is a need to have co-ordinated information services through which 'authoritative' statements, advice and guidance can be provided to the public. We have, therefore, been making and encouraging preparations to organize EPIS wherever there is a place from which government would operate—be it national or local. Considering the misinformation which can be produced in even a relatively small disaster, which happened in and around Sudbury, the need for such a service takes on added importance.

When we refer to the Peacetime Public Information Service, we are talking mainly about the service which forms part of federal and provincial EMO's, that, in peacetime, creates the requisite information programs, including publications and programs for the public, which can be used on or over existing public media. Several million pieces of literature are stocked across the country, and some TV, radio clips and films are readily available.

Shortly, the first of a series of small leaflets for the public, dealing with peacetime emergencies, will be produced.

The Warning activity involves the National Survival Attack Warning System, which is operated by the Canadian Forces. In addition to the siren system, this involves the provision of meteorological services by which forecasts of predicted fallout can be made.

In addition, the Emergency Broadcasting System, operated by the Canadian Broadcasting Corporation, in co-operation with the private television and radio companies, forms a most important component to the Warning activity.

In view of the renewed interest in developing better capabilities for dealing with peacetime disasters, maybe more consideration should be given to tieing in local EMO's, particularly with the Meteorological Forecasting Services, and looking at the U.S. arrangement, whereby the local authorities can utilize the siren system for warning of peacetime emergencies. Also, the communication links between local EMO's and their associated radio and TV stations should be reexamined.

The third sub-program we call **Essential Societal Services,** including the activities of Health, Welfare and Education. One province has suggested religious affairs as an activity.

In the past, a great deal has been done within the *Health Activity*—a good portion of it has been generated by the Federal Department of National Health and Welfare. I refer, of course, to such things as the $20 million medical stockpile of equipment required for development of advanced treatment centres, casualty collecting units and emergency hospitals; and from which Canada's contribution to international disaster relief is sometimes drawn, the hospital disaster institutes which have resulted in a large segment of the hospitals having peacetime emergency hospital disaster plans; the training programs conducted here for all segments of the health profession, including nurse educators and pharmacists; the inclusion of disaster preparedness information in university faculties associated with this activity. It must, of course, be recognized that Emergency Health Services have as much interest in public health as with the more dramatic casualty care.

Arrangements are in existence whereby the units which comprise the stockpiles can be released to meet peacetime disasters such as on the occasion of the Yellowknife Hospital Fire in 1966, when an emergency hospital was flown in and was operating while the remains of the hospital were still smouldering.

However, with all that has gone on, there is a need to recognize that the real key to effective emergency health plans for war or peacetime emergencies, rests at the municipal level of government, through its Medical Officer of Health, working closely with the Medical Association and the hospitals. As a matter of interest, the recent Federal/Provincial Task Force on the Cost of Health Services, made mention of the fact that civil defence planning was an important peacetime resource.

The *Welfare Activity* is related primarily to the development of mass care arrangements for lodging, clothing, feeding, personal services and registration and inquiry. The patterns of organization suggested by the Emergency Welfare Services have been used in peace-

time disasters such as the Manitoba Floods and the Ville LaSalle apartment explosion near Montreal.

Additionally, there are stocks of mobile feeding units (ten of which were sent to Nigeria as part of Canada's contribution), welfare centre kits, and, as well, a sizeable stockpile of emergency clothing held on their behalf by the government. Because of the importance of welfare activities in any disaster operation, ranging from civil unrest through to war, it should be the aim of emergency planners to have a capability to organize a minimum of one welfare centre in each community.

A matter which today is possibly more readily acknowledged than in the past, relates to what individual rights are, or what help is available to individuals in our context, during emergencies. I have been impressed by the Office of Emergency Preparedness in this area of disaster operations. As has been emphasized by many of our government leaders, there is, in this complex world, a need for government to show more concern for the needs of the people.

At this point in time, not much has been done with regard to what we refer to as the *Education Activity*. From a war emergency point of view, the urban centres which house our educational authorities, are located in what we refer to as Target Areas. How would a nation reestablish its educational system?

As well, what should be done to try to preserve our heritage and culture, as represented in our Museums and Archives? I am not suggesting that EMO has the answers to provide, but I do wonder just what steps have been taken by authorities in this area.

The next sub-program relates to the **Continuity of Government.** The activities currently contained within it relates to those matters which would ensure the preservation of political leadership, the structure of government, as well as providing the mechanisms by which government would be able to exercise effective control and direction of its essential services, and international relations.

For a war emergency, there are a number of protected facilities which have been developed from which elements of the central and provincial governments would operate. Similarly, there are over 100 local emergency govenment headquarters for use by local authorities. This network of installations is connected by means of communication facilities which are in existence today.

As I have mentioned earlier, our emphasis has been on war emergency preparations. It is obvious that, from what I have said about the need for co-ordinated action, information centres and so forth, there is also a need to ensure that we do what we can to provide effective and efficient situation or operations rooms, especially within urban centres, from which effective control can be exercised by municipal governments during emergencies. There is also a need to analyze what can be done to make those local emergency headquarters now in existence, satisfactory for the conduct of peacetime, as opposed to wartime, operations.

In concluding my too brief comments on this particular sub-program, I would draw to your attention the existence of a Canada/United States Agreement on Civil Emergency Planning, which authorizes joint civil planning for war emergencies among the respective federal and provincial/state authorities.

The fifth sub-program is called **Essential Utilities and Services.** and it includes the activities of Fire, Rescue, Utilities and Engineering. You will recognize that most of these activities are municipally based.

Over the past years, considerable federal financial support was provided to provincial and municipal fire authorities. The purpose of this support was to assist in improving the capability of existing fire services to do their tasks. The support was provided in the area of fire hose coupling standardization, fire apparatus including hose, costs of special auxiliary fire training programs and fire prevention literature.

Surprisingly, this program of support was criticized for being both too much and too little. I feel this criticism was unjustified because I think that whatever can be done to improve existing emergency services in the final analysis improves our overall national capability.

The *Fire Services* in any municipality is a key emergency service and must never be ignored when municipal emergency plans are being developed.

The *Rescue Activity* is important for a wide range of disaster operations. Two of the problems associated with the service have been the lack of leadership required for its development, and the high costs associated with equipping such a service. There are a number of skilled Rescue Squads in existence—possibly surviving would be a better word—in many municipalities. In fact, our limited records show over 4,500 volunteers associated with it. These rescue squads have, over the years, proved their usefulness in a peacetime environment.

In the general area of *Utilities and Engineering Services*, we would hope that plans and preparations are made for the continued operation of these important services. Too often they are taken for granted and, indeed, I feel that the operators do also. Interestingly, the lack of electrical power effectively put out of action, the water and sewerage systems in Corpus Christi (Hurricane Celia, 1970) and at Sudbury (August, 1970).

In major disasters, especially floods and hurricanes, (and of course, snowstorms), the street departments need to have plans on how to cope with the unusual. Debris clearance has proved to be a most spectacular operation in the United States hurricane disasters.

In this general area, there should be serious consideration given to the standard operating procedures needed for mutual aid arrangements, comparable, for example, to those existing among the various fire services in Ontario. These comments, of course, apply to all emergency services within this sub-program.

You will note that the sub-program of **Economic Planning** and **Resource Control,** covers a large number of activities. As I noted earlier, one of our aims is to

manage our surviving resources. To a great extent, the major responsibility for action in this broad area, falls on the shoulders of federal departments and they are required to create the organizations needed to control and manage and conserve our resources, especially in a period following nuclear attack. One department is responsible for planning the creation of a War Supplies Agency to control production and distribution of essential supplies; another is responsible for the development of an emergency manpower authority; yet another, for the control of engineering and construction resources; and others are responsible for fisheries operation, agricultural production, finance and housing.

Most of the activity in this sub-program has decidedly been directed to war emergency planning. However, some departments which have responsibilities for this type of planning, have also given serious attention to the contribution they can make to support provincial or local action in peacetime emergencies. I refer to such departments as Manpower and Immigration, Public Works and Agriculture. I think it is important that all federal departments and agencies, but especially those with civil emergency planning staffs, take a real hard look as to how they can effectively supplement peacetime emergency operations conducted by provinces and municipalities.

The last grouping is the **Service and Support Activities.**

The *Telecommunications Activity* is related mainly to the proposed wartime need for the control of telecommunications to ensure the availability of communication services to essential users. The organization known as ENTO (Emergency National Telecommunications Organization), would control national telecommunications, radio and TV.

Damage Determination refers to having a capability to assess damage to buildings, their contents, and other structures such as roads and bridges. The capability is needed in peacetime emergencies as well as wartime post-attack situations.

The *Law and Order Activity* is most important. In addition to emergency planning related to the Police Forces, there is a need for plans covering the operation of the Courts, as well as the penal and reform systems.

One lesson arising out of U.S. experience during major disasters, is the need for legal aid teams to act as advisors to disaster victims, especially those who, unfortunately, come from the poorer segments of our society and who, possibly, require more assistance than others.

Over the years and through federal support, a large number of municipalities and some provinces have organized and trained auxiliary police forces, operating under the direction of the regular forces. They have proven their worth in many emergencies.

Again, like the Fire Services, the Police form a significant component of any disaster operation and, in most cases, are the first service into action during an emergency.

The importance of and need for *Postal Services* during an emergency is, I am sure, obvious to everyone here.

The four general areas of *Transportation* are all contributors to successful disaster operations.

And finally, the activity of *Vulnerability Analysis* refers to methods which can be used to estimate the vulnerability of structures, systems and people, to the full spectrum of disasters.

Emergency Measures Organization

Having spoken rather briefly about all the services and agencies which have responsibilities for making emergency preparations, I should note briefly just what constitutes EMO's and what their responsibilities are. Briefly, at each level of government, there are EMO's. They range in manpower strength from 92 in Canada EMO, which includes the College and Regional Staff at the federal level, down to part time officers within many municipalities. The personnel engaged in them are employees of the level of government at which they operate.

They all have five general responsibilities:

- to provide leadership and guidance to all agencies that should be involved in emergency preparations—make these agencies disaster conscious;
- to provide planning and training support to government departments and agencies;
- to co-ordinate the preparation of emergency plans;
- to make plans and preparations for those matters which are not a direct responsibility of a department of government;
- to make plans and preparations for the provision of information to the public.

We often hear criticism of local EMO's for not being available 24 hours per day. Regretably, there are, at this time, insufficient funds to provide the size of staffs to make such an arrangement a reality except, of course, under special arrangements such as exist in Metro Toronto. When one considers the responsibilities which a municipality is expected to carry out in the general area of emergency measures, it appears that the resources provided to them are in inverse ratio to the responsibilities assigned to them.

A final point to make is that those responsible for EMO's should take a hard look at where, in the power structure of community, does the EMO Co-ordinator stand. Are his peers the heads of municipal or provincial agencies? If not, it is difficult to see how he can do his job effectively unless he is provided with a high input of charisma.

The Cost

The total cost of the program of civil emergency measures for the current fiscal year, is estimated to be in the order of $14 millions, of which $1 million is the cost to the provincial governments. Insofar as Canada EMO

is concerned, its budget is $5 millions, of which $3 millions is provided to support provincial and local organizations.

Over the years, substantial assets have been accumulated both federally and provincially, which, if they had to be totally refinanced, could cost governments and industry some hundreds of millions of dollars. I am not offering that comment as a justification for the relatively low financial input into the program, but rather to emphasize the fact that civil emergency measures, whether for war or peacetime emergencies, are related to the effects of disasters, and are thus not subject to the frequency of obsolescence, as are, for example, sophisticated armaments such as jet aircraft, tanks and missiles. Hence, there is a real high confidence value to 'emergency hardware', be it a fire pumper, a radio or a protected emergency government headquarters.

Another point, when we are speaking of money, is that in the case of measures needed to meet a nuclear threat, various studies conducted in Canada on the cost effectiveness of various defence systems, have demonstrated rather dramatically that at the lower levels of defence expenditures, civil emergency measures are several times more effective than active defence measures, in terms of the potential saving of life.

Some Forms of Federal Support

Occasionnally one hears comment that some provinces contribute from the resources, a greater percentage of funds to the civil emergency measures program than does the federal government. Without getting into actual dollar costs, I think one should recognize some essential facts.

The following are some of the programs for which the full cost is attributed to the Federal Government.

- Operation of the Canadian Emergency Measures College and full costs of transporting provincial and local candidates.
- The Emergency Broadcasting System.
- Regional Emergency Government Headquarters.
- The Warning System.
- Medical stockpile.
- Welfare stockpile.
- Limited disaster research.
- Emergency publications for the public.
- National Fallout Protection Survey.

The programs which are cost shared with the provinces—mostly on a 75/25 basis—are:

- Financial Assistance.
- Zone Headquarters construction.
- Radef equipment procurement.
- Workmen's Compensation.
- Fire-hose coupling standardization.

The Future

Without getting into detail, because there is going to have to be a good deal of consultation with other agencies involved in civil emergency planning, I would suggest that as a result of the change in emphasis, the following are areas which deserve exploration:

- Creation of more adequate systems of telecommunications for agencies most directly involved in disasters.
- Bringing into closer and more regular contact, federal and provincial officials who have related tasks during periods of emergency.
- Possibly conducting preparedness conferences within provinces, related to the more common or prevalent peacetime emergencies.
- The development, continual review and testing of peacetime emergency or disaster plans by provinces and municipalities.
- Sponsoring more studies or research in the areas related to peacetime emergencies.
- Speedier response by federal departments to emergencies.
- The possible conduct of youth leadership courses at the College during the summer months.

Reviewing ways in which financial assistance can be used to enhance peacetime preparations.

Summary

The federal government policy statements with respect to national defence (and foreign policy) have introduced a shift in emphasis on what can be said to be the order of priorities as between the external and internal threats.

There is a need to develop contingency plans to meet these threats.

There are tremendous civil resources within the country which can be brought to bear on any type of emergency.

There is now in existence, a national program for civil emergency measures, comprising:

- ten provinces and the territories;
- federal departments and agencies;
- some 300 odd EMO's;
- forty odd elements or activities ranging from rescue through to telecommunications.

To be truly effective, the national program must involve the public, in fact, all aspects of society.

It would appear that the program costs are now at a level which keeps in existence, the basic elements of the program but does not permit any significant advance.

Conclusion

In conclusion, I would like to leave with you, the following points:

- Emergency planning is an activity of governments, enabling them to respond to emergencies.
- There is, therefore, a responsibility on each

(continued on page 20) **REDIRECTION FOR**

WHY CIVIL DEFENCE – 1970

Responsibilities, Costs and Rewards of Civil Defence

by
*Dr. Eugene P. Wigner**

It is not necessary for me to tell you that I felt greatly honored when Mr. Patterson invited me to address your Seminar. At the same time, it was not clear to me what I should hope: that you already agree with what I'll tell you about the necessity and usefulness of civil defence, or that some of my message should be, at present, foreign to you. In the first case, if you already agree with what I'll say, I may bore you. Nevertheless, I would prefer it that way because, if you disagree with my message, my hopes of convincing you are modest. One can convince a disbeliever of a theorem in mathematics with a well formulated proof; one can well hope to convince a doubter in physics with a well conceived experiment. In human affairs, our subconscious is decisive; persuasion and arguments rarely affect it. Thus, my hope is that my discussion will bore you.

One cannot logically and consistently discuss a question of policy without specifying its objectives. These are, in this case, the national objectives and, as a rule, a stranger should not tell you what they are or should be. On the other hand, to a very considerable degree, defence, and civil defence is an integral part of this, has ceased to be a purely national affair. If a dictator can impose his will on Canada, the United States cannot long survive. Conversely, your independence could not last long, should the United States fall. As was said in another context, we either stand together or hang separately. I am very deeply conscious of this fact and hope that you also not only know but feel it.

The speaker from your External Affairs department has already told us that the national objectives include maintaining the independence of the country, its democracy and freedom. They also include every effort to avoid a war and all the suffering which even a just war entails. We do not want to force our ideals on other nations—a certain variety of human societies may, in fact, be desirable. However, surely, if dictatorships ruled the world, it would be disastrous from the point of view of the human values which are dear to us. An ant society would result, a degradation of human life and initiative, much worse than any now existing even under dictatorships. We are, and should be, willing to pay a very high price to avoid this. Some say that the possibility of a nuclear was is too high a price: "better red than dead". It may have been possible to claim this some time ago, but it surely is not true now. If we submitted to one of the great dictatorships, we would hardly avoid the devastation of a nuclear war: our countries would probably become the staging areas for an attack by one against the other great dictatorship. We have no choice but to defend ourselves, defending thereby also our ideals.

It was probably unnecessary to say all this: none of us wants a dictatorship to take over our country; all of us want to avoid war. The question is only, how to achieve both, how large an effort do we have to devote to our defence, and what fraction of this effort should go into civil defence? To what extent should we stand by our friends and how much should we accommodate our enemies? In order to form some ideas on these questions, I will try to envisage the consequences of two alternative attitudes. The first one implies trying to accommodate our opponents, to neglect civil defence and, as is often said, to offer up our people as hostages for our good behavior. The second alternative is to face up to the dangers, protect our people as much as possible, make it clear that we have no aggressive intentions, but also that we'll resist aggression.

Neither of the two pictures which will emerge will be rosy. It would be, however, not only unfair—it would also be illogical—to look only at one of the pictures and, since it is not rosy, decide on the other one. Yet, this is often done by opponents of civil defence, who then usually turn out to be opponents of all defence.

Neglecting Civil Defence

What can happen if we neglect to provide protection for our people against the threats of a nuclear war? If

**ABOUT THE AUTHOR*

Dr. Wigner, a world renowned physicist and Nobel Prize winner was born in Berlin in 1902. He is now Professor of Mathematical Physics at Princeton University.

He worked on the Plutonium Project at the University of Chicago, 1942-45 and was on the Board of Directors to the Oak Ridge Institute, 1947-50. He was Director of Research and Development at the Clinton Laboratories, Oak Ridge, 1946-47, and was again at Oak Ridge as Director, Civil Defence Project, 1964-65.

Dr. Wigner is and has been a member of numerous national and international Mathematical, Physical and Scientific Societies during which time he served in such capacities as Director, Vice-President and President.

He holds honorary degrees from many American and European Universities including one awarded by the University of Alberta. Other awards include the Medal for Merit; Fermi Award; Atoms for Peace Award, 1960; Medal of German Physical Society, 1961; Nobel Prize for Physics, 1963; George Washington Award; Medal of American Hungarian Studies Foundation, 1965; and the U.S. National Medal of Science, 1969.

His publications include *Nuclear Structure* (with L. Eisenbud) and *Theory of Neutron Chain Reactors* (with A. M. Weinburg), both of which were published in 1958.

the threat materializes, our people will not only be helpless and disoriented, they would also feel abandoned. They would feel bitter and resentful toward their leaders of yesterday—they would feel bitter even if the actual war can be averted at the last minute. It is true that our people do not press now for shelters, for providing protection for them. But if an emergency arose, they would blame the leadership for the lack of foresight which it exhibited. The fact that they do not demand shelters now is a sign of their confidence in your foresight, in your understanding of the dangers that may threaten them sometime, and in your having done all to avert and to render as innocuous as possible those dangers. And if the danger should materialize, then, in the words of Yale psychologist Janis, To a very large extent, the morale of the survivors will be determined by the effectiveness of the civil defence measures." This morale is of decisive value after a catastrophe.

There are three remarks to be added to the preceding dark picture which may develop if the threat of a nuclear war should become more acute. The first is a reservation to the statement made before, that the reason people do not demand a more effective civil defence is that they now have confidence in their leaders —confidence that they will see to it that no catastrophe will strike them unprepared. This is true, according to opinion polls, of a very large majority of all the people. There is, however, a very strongly dissenting minority, of about 5%, which says it fears that civil defence measures will alarm the leaders of Soviet Russia and will make them fear an attack from the United States. Both Kosygin and Krushchev contradicted this view—contradicted it not with the intent of supporting our civil defence, but contradicted it nevertheless. I could quote them, but will not do so because this argument surely does not apply to Canada and it is, in fact, probable that the opposition party to civil defence in this country is less vocal than in the U.S.

The second remark concerns the attitude of the Soviet Union toward civil defence. Do they try to protect their people? Do they inform them of the dangers of a nuclear war? The answer is definitely "yes" to both questions. The physical protection which is being provided will be discussed later. Its character is, as you'll hear, an alarming one. As to keeping silent about the threat, about the possible dangers that may threaten their people in the case of a confrontation with the imperialists or the Maoist camp of brigands and propagandists, this is opposite to their policies. As Marshall Chuikov said, in 1965, "Civil defence units have been set up at all enterprises, in cities and rural areas." There is compulsory civil defence instruction in all high schools, in grades five, six, seven and particularly eight, and also for factory workers. An excellent textbook in civil defence has been published, which we just had translated in the hope that it will be distributed in our country also. No, the USSR does not consider its civil defence to be "provocative".

My third remark relates to the question whether a conflict is made more likely by our protecting our people from the effects of it, or less likely. Clearly, this is a crucial, a decisive, question and, in fact, I believe that the principal calamity which the absence of adequate civil defence preparations implies is the increased danger of war. Why is that so?

Civil Defence and the Likelihood of War

If we continue in the present situation of inadequate protection of our population while that of the USSR becomes increasingly well protected, we give the impression to the leaders of the USSR that we do not care for our freedoms and independence. This would provide a terrible temptation for them to exploit. It is not necessary to accuse them of ill will on this account, and I do not do so. They are convinced that their way is best, with an almighty central organization at top, with dissent suppressed below by means of prison or lunatic asylum. And, if we look about at the senseless dissent that we can observe around ourselves at so many places, they may be not as far wrong as we used to think a few years ago. To this comes the natural tendency of dictators to extend their power. All men want to do something; just to rest and let things happen is not truly *living* for a human being. When one sees animals peacefully resting if there is no outside stimulus, one begins to believe that this is the principal difference between animals and men: that men always want to accomplish something. And the most obvious objective for a dictator—the one most natural to him—is to extend his power over wider areas. Nor does he conceal this: Hitler did not, the leaders of the Soviet Union do not. "Capitalism must be destroyed" is what Suslov said. "The existing situation demands united action of the communist and all other anti-imperialist forces so that maximum use may be made of mounting possibilities for a broader offensive" is what the final document of the 1969 convention of 74 communist parties proclaimed. I could go on quoting similar statements.

Perhaps I should add that the wish to extend his power is very naturally greater in a dictator than in most of us—otherwise he would not have striven to become a dictator. It is illuminating in this connection that aggression by China and by the USSR were discussed yesterday, but not that by Canada or the U.S. No one is afraid that either of us will become aggressive, least of all the leaders of Soviet Russia or China.

This is a grim picture in some ways, but not a hopeless one. It seems to me that our obligation is clear: not to dangle the temptation of a possible conquest before the eyes of dictators. Politics is the art of the possible; and if the leaders of totalitarian countries had not realized this, they would not have succeeded in becoming the leaders. Conquest may be a natural objective for them; if it does not appear to be possible, they'll find others, such as the betterment of the material life of their subjects.

I have often been asked how I believe the attempt at a conquest may be made, whether I believe that there

will be a sudden attack, unprovoked and, as they say, out of the blue. No, I do not believe that. Hitler's tactic is a much more tempting one: to demand a relatively small, and perhaps almost justifiable concession under a dire threat and to repeat this tactic until the enemy is demoralized. We, the United States, could be asked to withdraw our protection of "warmongering Germany", otherwise many millions of Americans will die tomorrow. Activities of the New Left could further increase the effectiveness of such threats. You could be asked, as a first demand, to permit the installation of an Army base somewhere in the North, in a territory which is hardly populated anyway. A tactic similar to this seems to me the principal danger which the present lack of protection of the people causes, the diminishing of this danger the principal reward of an adequate civil defence structure.

Civil Defence — It's Cost and Effectiveness

The picture of what could happen to our countries and ourselves in the absence of a more adequate civil defence structure is grim enough so that it would be easy to conclude that the other path must be chosen—a strong civil defence structure. A similar tack is chosen by the detractors of civil defence: they show the costs of civil defence, the remaining dangers, the incompleteness of protection, and conclude that no, the other path must be chosen, we must not defend our people.

Before comparing the situation of our countries with and without civil defence, it may be well to describe what we may consider a truly adequate civil defence, what its price would be and how much protection it would give against nuclear attack. Much of what I will say was derived from studies based on the situation in the United States. The situation in Canada may be better, partly because of the lower density of the population and also because a surprise attack on Canada would make even less sense than one on the U.S.—the purpose of conquerors is to rule over people, not to kill them.

There are two recognized methods of civil defence: sheltering is one, evacuation of cities and dispersal of their populations the other. Until recently, most of us interested in civil defence were opposed to evacuation because it takes time and, if undertaken during a crisis, it would aggravate the crisis and may even precipitate an attack. Also, we did consider preparations for evacuation and dispersal provocative: since evacuation is not useful in a crisis, it can well serve only as a prelude to a confrontation. It would be natural to put forward a demand, as described before, after evacuating the cities and thus reducing one's vulnerability. As I said elsewhere, this could reduce the opponent's retaliatory power to a myth.

Lately, my attitude, at least toward evacuation, has changed. The reason is that the Soviet Union's civil defence effort, as far as the physical protection of their people is concerned, is centered on an evacuation program. Preparations for evacuation cannot be undertaken in secrecy and, in fact, they describe their plans and arrangements in full detail. Furthermore, if carried out, their evacuation and dispersal would very, very effectively protect their people: even if all the U.S. missiles were retargeted on the dispersed population and all its missiles were used this way, the casualties which these could cause would number around six million. Our retaliatory power would be severely impaired.

This is the reason for my changed attitude. It seems to me that the best counter to an opponent's evacuation plans are plans for what I call counter evacuation—dispersal of our own people. For a variety of reasons, political and emotional, this is much more difficult for a democracy to achieve than for a dictatorship but it would be, nevertheless, the best response. Also, preparations for evacuation are quite inexpensive.

Most of the thinking on civil defence in which I have participated in the past was concerned, however, with shelters—blast shelters for people in cities. These are quite costly—about $300 per person. In the United States, more than one-third of all the people should have blast shelters and it is possible to plan them in such a way as to render them quite effective, even in case of sudden attack. Nevertheless, they are not as effective as the evacuation plans of the USSR could be; the total fatalities in case of a full scale Russian attack directed solely against the population might remain about 10% in spite of these shelters. However, as I said before, their principal function and usefulness would be to discourage the attack.

The high cost of the blast shelters has been much criticized and, of course, the 23 billion which they would cost is a great deal of money. If the building of these shelters is spread over a four-year period—which seems to be quite reasonable—it would mean that everyone has to work about 14 minutes longer each week in order to increase the national product by the cost of these shelters. Some people say, of course, that we have other tasks, more important than the building of shelters, that we should abolish poverty first, etc. They remind me of the cook who saw his master in the water, struggling with the waves, but did not go to his rescue because, he said, he had to cook dinner for him. Let me add, though, that cooks are, as a rule, more reasonable than to behave this way.

Naturally, blast shelters for the cities is not the only task of civil defence. Even more important, and very much less expensive, is rural civil defence, the instruction of people in how to protect themselves from fallout radiation, etc. The Russian civil defence book deals with these questions extensively; that is why we had it translated and hope it will be widely distributed. No one can accuse us of warmongering by advocating civil defence this way.

Needless to say, this was a very quick and incomplete review of the technical aspects and effectiveness of civil defence measures. It was intended to give an orientation, and perhaps to arouse the curiosity for details in some of

(*continued on page 20*) **WHY CIVIL**

CLOSING ADDRESS

by
*Dr. J. C. Arnell**
Assistant Deputy Minister (Finance)

Before turning to the substance of my remarks, I would like to express the regrets of Mr. Armstrong, my deputy minister, that he has not been able to attend this seminar on civil emergency planning.

This has been the third seminar aimed at promoting a better understanding of the international situation that makes civil emergency measures planning necessary and our concept of dealing with it. In the next few minutes, I shall try and highlight a few of the points that I think you should take away with you on this matter of importance to all communities.

As you all know, the requirement for civil emergency measures, or civil defence as it used to be called, was a direct outgrowth of war conditions and their aftermath. After the initial euphoria following World War II, it was realized that North America was threatened by direct attack for the first time and that extreme damage might be anticipated because of the availability of nuclear weapons in the hands of the potential aggressor. As the years have passed, people have tended to imagine that this threat has become non-existent. There is no doubt that the confrontation between the two superpowers is now in the form of stable deterrence, so that the risk of an attack on North America is lessened; however the offensive weapon systems for such an attack are still there and are being expended, at least by the Russians. This means that the need for emergency measures planning is as important as in the past.

All too often, the significance of this type of activity to a community in peacetime is lost. Perhaps this is because too much emphasis has been placed on the possiblity of a nuclear holocaust, so that the need for emergency plans to cope with a peacetime emergency, be it man-made or from natural causes, tends to be overlooked. Within the last year, we have seen examples of peacetime disasters ranging from the oil contamination due to the grounding of the tanker "Arrow" at Chedabucto Bay on Cape Breton Island to the recent devastation to parts of the town of Sudbury in a recent storm. Such events cannot be forecast, but it is certain that emergency action is always necessary. This emergency action will be much more effective, if responsible authorities make some preparations in advance.

It must be obvious to you that the civil emergency plans already developed at the federal, provincial, territorial and municipal levels, if kept current by small designated staffs, can contribute in no small measure to the capacity to respond to a peacetime as well as a wartime disaster. I feel that this is becoming increasingly important in the world of today and would like to point out its direct relationship to our civil emergency measures program. In the past 15 to 20 years, the federal government, in partnership with the provincial governments, has been providing leadership, direction and training resources in the development of our capability to respond to crisis. Through the facilities of this College, mayors from all across Canada have taken part in a conference on civil preparedness, planning courses have been given for municipal planners, doctors, nurses, welfare workers, scientists and those of other disciplines that form the thread of responsibility which collectively form the basis of our communal society. The development of hospital disaster plans, emergency hospital and medical stockpiles by the Department of National Health and Welfare is another from of national preparedness which is applicable to all levels of crisis. It is essential that this knowledge is retained throughout the country and this means that there must be continuing training programs and other related programs.

It has already been pointed out that there is a need for both elected and appointed officials to understand the burden of responsibility they owe to the people of Canada. This includes a fundamental understanding and appreciation that it will not be sufficient, as a crisis develops and the priorities change, to ask your emergency planners "How much money do you need to

ABOUT THE AUTHOR

Dr. Arnell was born in Halifax, N.S., in 1918. He won a BSc with honours in chemistry, and a Master's degree in physical chemistry at Dalhousie University in Halifax. In 1942 he earned his Doctorate in the same field at McGill University, Montreal.

Between 1942-46 he served in the Canadian Army as a technical staff officer in the Chemical Warfare Laboratories. After discharge he continued this employment as a civilian until 1949 when he was appointed Superintendent of the Defence Research Chemical Laboratories, Defence Research Board. He attended the National Defence College, Kingston, Ont., in 1951-52.

Dr. Arnell became Senior Scientific Officer (Special Weapons) in 1954 and was responsible for coordinating the Board's research in the defensive aspects of atomic, biological and chemical warfare. In 1955 he was named Director of Scientific Intelligence and in 1958 became DRB's first Director of Plans. In the same year he assumed the duties of Scientific Adviser to the Chief of the Air Staff and in 1964 was appointed to serve in the same capacity for the Chief of the Naval Staff. In 1966 he was appointed to his present position.

Dr. Arnell is a Fellow of the Chemical Institute of Canada and a member of the Canadian Aeronautics and Space Institute.

complete the necessary arrangements to cope with the disaster?" The one resource which cannot be bought is time. It is for this reason that civil emergency planning must continue in peacetime with the aim of at least maintaining our present operational capability and perhaps reduce some of the shortcomings. This can only be done by persons such as yourselves who share some of the responsibility and authority for the provision of leadership.

On behalf of the Minister, I would like to thank you for coming to Arnprior for these two days and sincerely hope that you have found the seminar rewarding and will take away a broader understanding of the role of civil emergency measures in Canada today.▲

REDIRECTION FOR (*continued from page 15*)

agency of government to analyze its role for emergencies.

- The hard core of disaster services really exists already in our municipalities in the form of municipal departments and voluntary agencies and societies.
- EMO's are not created to supplant government agencies but to provide the machinery by which these agencies can operate more effectively in an emergency.
- Civil emergency preparations are a minimum form of insurance, the premiums of which, in dollar terms, are infinitesmal in relation to the losses in lives, property and to the economy, which can result from taking no preparatory action.▲

WHY CIVIL (*continued from page 18*)

you. May I add only that, like all other defence, in order to be fully effective civil defence must be a continuing effort. Let me come, last, to what we can expect from civil defence measures as to how they might influence our future.

Embracing Civil Defence

Let me begin with the darker side of the picture. One factor here is that the preparations take a very long time —I mentioned four years, and that may have been optimistic. The preparations would undoubtedly be resented by the leaders of the USSR as a hindrance to their most natural goals and as a renewed sign of the desire of "capitalists to retain power and to save monopolistic imperialism and fascism". Even if we eventually persuade the leaders of totalitarian countries to change their goals from world conquest to the economic betterment of their subjects, this will undoubtedly take time, and that time will not be pleasant. Perhaps I need not discuss this in full detail, since there is a large literature drawing attention to the subject.

What can we hope for when that conversion has taken place? I do think a great deal. It is natural for two nations to distrust and dislike each other if, by a sudden attack, each can do irreparable harm to the other. Men, under similar circumstances, would not feel otherwise. This is, however, our present situation. If, however, the defences of both are built up to such a degree that they do not have to fear each other, that they cannot by a sudden attack destroy the other party, and if neither then wishes any more to destroy the other, in due course of time a degree of understanding of the other way of life and even sympathy therefor may develop. This, I believe, is the great promise of civil defence—a promise which one may well hope to be realizable; its great dangers come in the years during which this is brought about. ▲

CZECHOSLOVAKIA ACCENTS CIVIL DEFENCE

*Reprinted from Survive, January-February 1970.**

Behind the Iron Curtain facts about civil defence are to a great extent considered secret. Information received through official documents and the press is very sparse. Recently, however, some news of Czech civil defence has been received through Czechoslovakian refugees arriving in Switzerland as a result of the Czech political crisis.

On April 18, 1961 a "total defence" law was enacted in Czechoslovakia. It was said that its aim was to "perfect the defence of freedom and the socialistic order." The law not only anticipates a strong defence through providing for increased fighting forces but above all stipulates a suitable organization of Czech total defence. Civil defence measures as well as industrial protection are to be stepped up. The national economy must be geared to defence to a greater extent than has been the case in past planning.

Civil Defence for the Citizen

Civil defence is consequently a part of this total defence of the Czech republic. Its task is to protect the inhabitants from enemy aerial attacks, to recover from the consequences of these attacks and to create a base for a frictionless commercial and industrial life in war. The citizen will have an active role in accomplishing civil defence tasks.

Accounding to official Czech sources great activity was displayed during the period 1962-1964 in the domain of training people in defence matters and in the protection against modern weapons such as nuclear bombs. In Czechoslovakia the Federation for Cooperation with the Army (SVAZARM) cooperates closely. Like the Soviet Union's DOSAAF, SVAZARM has great influence on Soviet civil defence. There is also cooperation with the Red Cross, the Federation for Physical Eduction and the Firefighting Corps.

Industrial Protection — an Important Part of the Organization

One of the most vital jobs of civil defence appears to be the protection of industry so that production can go on. Factories are therefore well supplied with protective equipment. Also, administrative agencies, newspaper printing shops, and radio and TV studios are protected. Employees are required to enroll in industrial protection classes.

The inhabitants at large do not have gas masks or other protective equipment. This latter fact has up to now been considered in the light of ideological and psychological background factors with reference to the official theory that the Soviet nuclear power protects all peace-loving countries in the socialistic camp

Shelters in New as well as Old Buildings

According to law all new buildings must have shelter. Specifications have been issued governing the construction of shelters in the basements of old buildings. There are no public shelters, but it is notable that the Prague subway contains a "subway central" for government use in the event of war.

Evacuation and Billeting

In case of need there must be a way for people, their belongings and other equipment to be moved away from places that are threatened by attack or actually attacked. In billeting areas residents are required to furnish food and lodging to evacuees and to take care of their possessions and evacuated equipment.

Extensive Survival Training

At the beginning of 1968 the party organ Rudé Pravo carried an article which cited the training of the Czech people in defence against modern weapons and survival measures. It revealed that during the years 1962-1964 five million people had successfully completed this training. Of these people 3.3 million had taken what seems to have been military and political courses oriented along these lines.

In 1965 the Minister of the Interior devised a plan for the further training of the people, including first aid, firefighting, protection against biological and chemical warfare and radioactive fallout, and construction of shelters. Czech refugees interviewed in Switzerland, however, appeared to have no knowledge of this training.

Civil Defence During the Czechoslovakian Crisis

During the Warsaw Alliance's occupation of Czechoslovakia in August 1968 there were statements in the newspapers that the Czech resistance movement used both civil defence personnel and civil defence equipment in establishing communications inside and outside the country. However, as far as is known, no radio transmitters are reserved exclusively for civil defence. Apparently there was some confusion with SVAZARM, which does have special radio units.▲

*Inga Lindblom, Public Information Officer for the Swedish Office of Civil Defence here translates an article on Czechoslovakian civil defense which appeared in Civilt Forsvar, the official Swedish publication for civil, economic and psychological defence.

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